NORTH ATLANTIC STORMS FOR JUNE, 1893.

[*Pressure in inches and millimeters; wind-force by Beaufort scale.*]

The paths of storms that appeared over the west part of the north Atlantic Ocean during June, 1893, are shown on Chart I. These paths have been determined from reports of observations by shipmasters received through the co-operation of the Hydrographic Office, Navy Department, and the "New York Herald Weather Service."

The north Atlantic pressure for June is highest in an area extending from the Azores southwestward to the 50th meridian, where it is above 30.20 (767); it is lowest from southern Greenland over Iceland, where it is below 29.80 (757).

In June there is usually an increase of pressure over southern and eastern portions of the ocean, and a decrease from the region south of Newfoundland and Nova Scotia to Greenland and Iceland. The greatest increase of pressure occurs from the Azores and Madeira islands to the Spanish Peninsula, where the mean values are .05 inch, or more, higher, and the most marked decrease is shown from Newfoundland to Greenland and Iceland, where the normal pressure is .05 inch, or more, lower than for the preceding month.

The principal track of June storms is traced from Newfoundland east-northeast to the 20th meridian, where the track divides, one part passing over Scotland and the other southeastward over France. A less frequented track is traced from Labrador to Iceland and thence over Scandinavia. The average velocity of north Atlantic storms for June is 16 statute miles per hour, the velocity for May and June being the lowest noted for the year. In June an average of one storm per month traverses the north Atlantic Ocean from the American to the European coasts.

June, 1893, was not marked by storms of exceptional severity over the north Atlantic Ocean. The most important storm of the month, and the only storm traced across the ocean from the American to the European coasts, was low area VIII, which appeared over the east part of the Gulf of Mexico the morning of the 15th. From the 15th to the 18th this storm moved slowly northeastward along and off the south and middle Atlantic coasts, attended by heavy rain and moderate gales from the south New England coast to the Florida Peninsula. By the morning of the 19th the storm-center had advanced to a position south of Newfoundland, with central pressure about 29.50 (749), and gales of force 10 over the Grand Banks. During the 20th and 21st the center of disturbance remained nearly stationary southeast of Newfoundland, with pressure 29.20 (742) to 29.30 (744), and gales of force 9 to 11. From the 22d to the 24th the storm occupied the region east of Newfoundland without an apparent decrease in energy. Reports of the 25th show a movement southeastward towards the Azores. By the 26th the storm had advanced to a position north of the Azores, with pressure about 29.30 (744), and gales of force 7 to 9, after which it passed rapidly northeastward and disappeared north of the British Isles during the 27th.

The month opened with a storm of moderate energy central over mid-ocean in high latitudes. During the 3d this storm apparently passed eastward north of the British Isles. On the 3d a storm of considerable strength appeared near the 40th meridian, with pressure about 29.40 (747) and gales of force 9 to 11. By the 4th this storm had apparently increased in energy, and the pressure continued low over mid-ocean until the 8th, when low area I advanced rapidly eastward from the northern part of the Gulf of Saint Lawrence. From the 8th to the 13th the pressure continued generally high and fair weather prevailed over mid-ocean. On the 12th a disturbance appeared west of the Bay of Biscay, where it remained nearly stationary, without evidence of marked energy, during the 13th. By the 14th the center of disturbance had apparently advanced towards the British Isles. Reports of the 15th indicate that this storm passed northwestward and united with a storm which appeared northeast of the Banks of Newfoundland on the 13th and moved thence eastward over mid-ocean. This area of low pressure remained nearly stationary over mid-ocean until the 19th when it was joined by low area VIII. On the 23d low area IX*a* was central off the southeast New England coast, from which position it moved slowly eastward as a storm of moderate strength and reached the 60th meridian the morning of the 26th, crossed the Grand Banks during the 27th, and occupied mid-ocean from the 28th to the close of the month. A storm apparently occupied the British Isles during the 23d and 24th, after which it disappeared to the eastward.

OCEAN ICE IN JUNE.

The following table shows the southern and eastern limits of the region within which icebergs or field ice were reported for June during the last 11 years:

Southern limit.			Eastern limit.		
Month.	Lat. N.	Long. W.	Month.	Lat. N.	Long. W.
	° ′	° ′		° ′	° ′
June, 1883	40 28	51 45	June, 1883	48 14	42 43
June, 1884	41 42	47 49	June, 1884	44 00	45 23
June, 1885	39 38	48 12	June, 1885	45 14	41 12
June, 1886	40 30	53 00	June, 1886	49 15	40 00
June, 1887	40 40	48 34	June, 1887	43 22	39 19
June, 1888	43 38	43 24	June, 1888	43 38	43 24
June, 1889	42 54	49 54	June, 1889	46 57	40 29
June, 1890	40 01	52 00	June, 1890*	46 08	37 07
June, 1891	40 15	50 24	June, 1891	44 15	43 47
June, 1892	41 44	50 40	June, 1892	45 50	40 46
June, 1893	42 08	53 19	June, 1893	47 20	44 19
Mean	41 09	49 55	Mean	45 50	41 41

*On the 10th a small block of ice was reported in N. 46° 28′, W. 28° 34′.

The limits of the region within which icebergs or field ice were reported for June, 1893, are shown on Chart I by ruled shading. The southernmost ice reported, 2 pieces of ice observed on the 9th in the position given, was about 1° north, and the easternmost ice reported, a large iceberg noted on the 23d in the position given in the table, was about 2½° west of the average eastern limit of ice for the month. Ice was encountered in great quantities on the northern edge of the Banks of Newfoundland, and many icebergs were reported along the east Newfoundland coast. On the 28th and 29th large bergs were reported in and to the eastward of the Straits of Belle Isle.

OCEAN FOG IN JUNE.

June is one of the months of greatest fog frequency near the Banks of Newfoundland. In June, 1893, there was an unusual prevalence of fog west of the 40th meridian.

The limits of fog belts west of the 40th meridian, as reported by shipmasters, are shown on Chart I by dotted shading. Near the Banks of Newfoundland fog was reported on 24 dates; between the 55th and 65th meridians on 16 dates; and west of the 65th meridian on 17 dates. Compared with the corresponding month of the last 5 years the dates of occurrence of fog near the Grand Banks numbered 8 more than the average; between the 55th and 65th meridians 3 more than the average; and west of the 65th meridian 2 more than the average. The fog noted by shipmasters and that reported by observers of the Weather Bureau on the middle Atlantic and New England coasts generally attended the approach or passage of general storms.